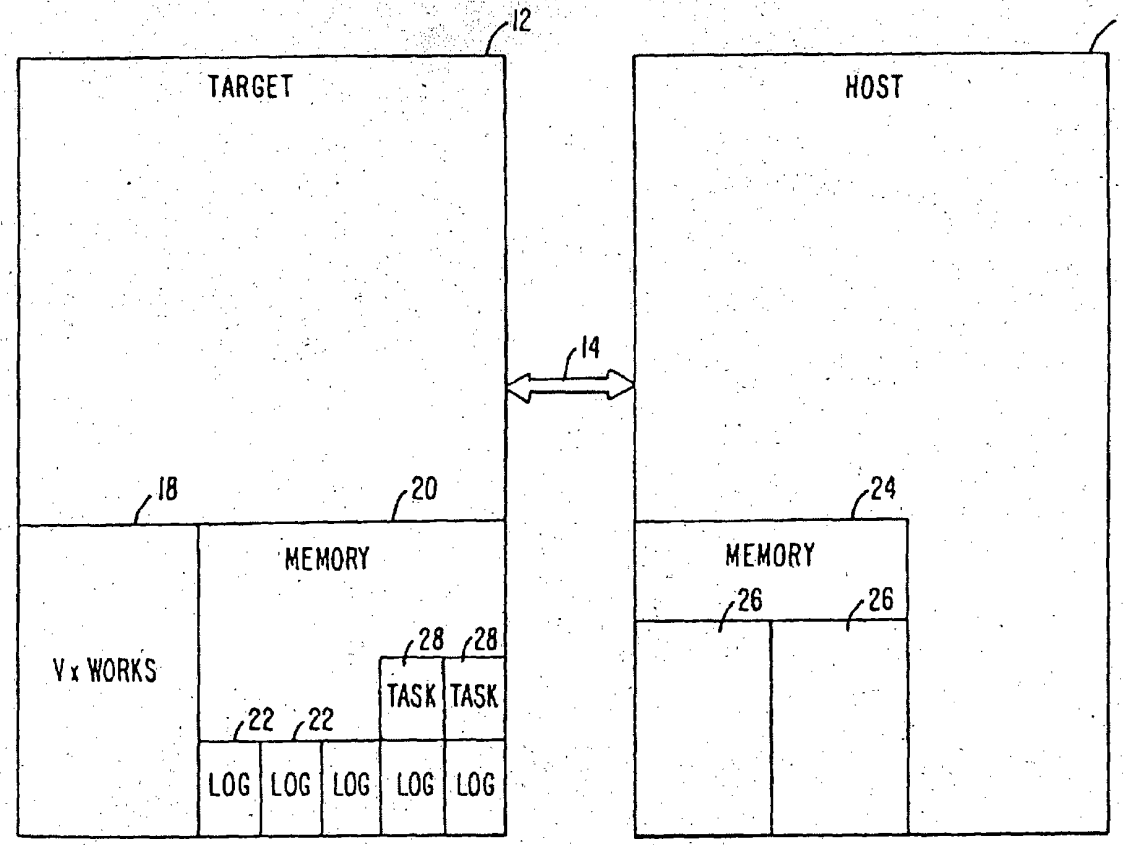
12
TARGET
16
HOST
14
18
20
24
MEMORY
MEMORY
26
26
28
28
Vx WORKS
TASK
TASK
22
22
LOG
LOG
LOG
LOG
LOG

FIG. 1.

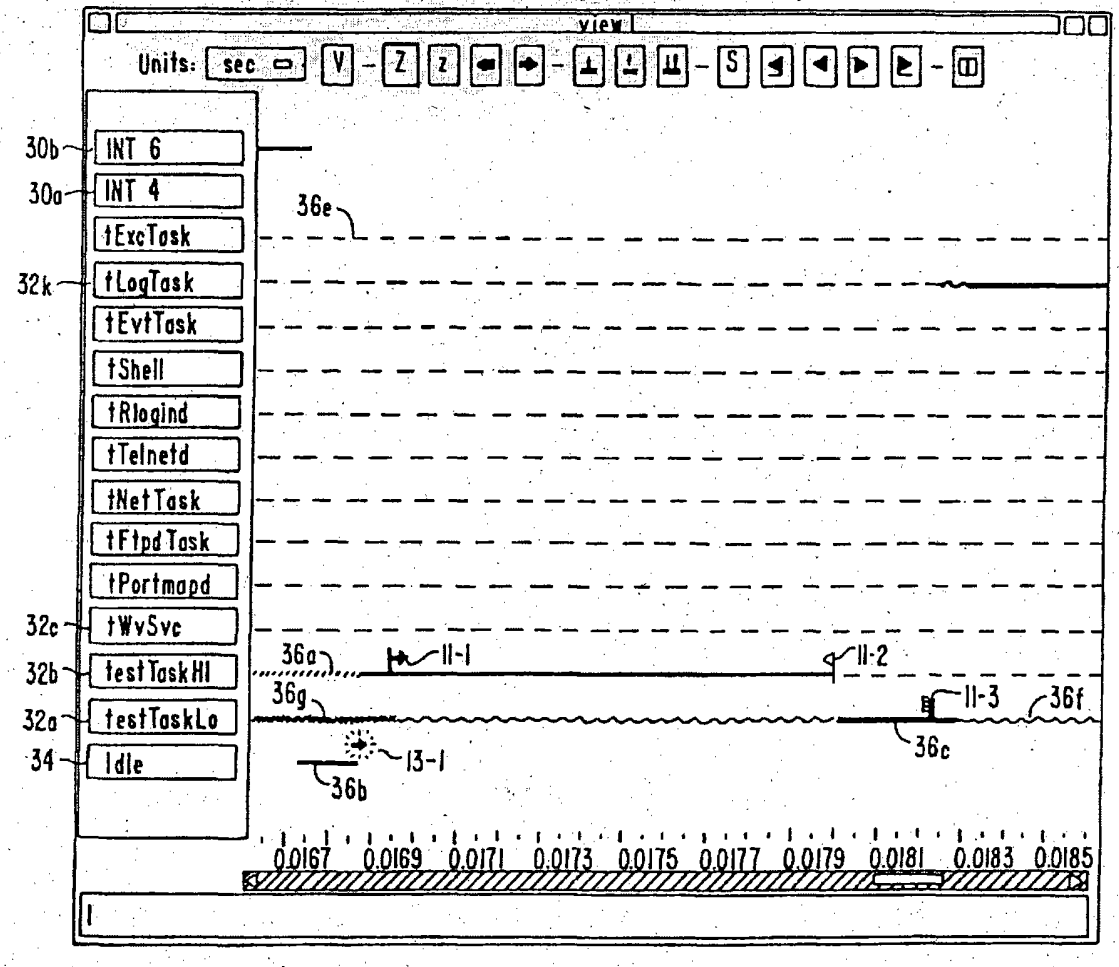
view
Units: sec
INT 6
INT 4
tExcTask
tLogTask
tEvtTask
tShell
tRlogind
tTelnetd
tNetTask
tFtpdTask
tPortmapd
tWvSvc
testTaskHI
testTaskLo
Idle
30b
30a
32k
32c
32b
32a
34
36e
36a
36g
36b
36c
36f
11-1
11-2
11-3
13-1
0.0167
0.0169
0.0171
0.0173
0.0175
0.0177
0.0179
0.0181
0.0183
0.0185

FIG. 2

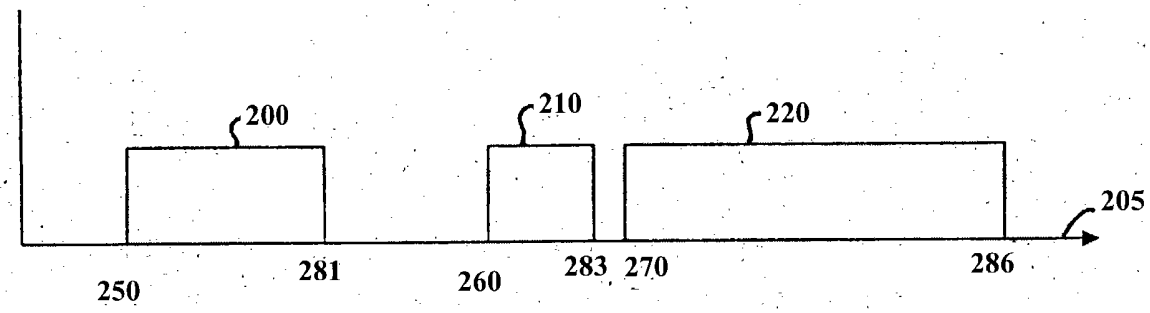

Figure 3

310	DISPATCHER ROUND OF 30 MS 320	INTERUPT ENABLE TIME 330 (MINIMUM TIME BETWEEN SUCCESSIVE INTERRUPTS)	DEADLINE (WORST CASE) 340	
Process	Time			
Task 1 322	0		20	
Task 2 324	10		30	
Task 3 326	25		60	
Idle				
ISR 1 332		4		
ISR 1 332		8		
....		...		
ISR 1 332		28		
ISR 2 334		**14**		

Figure 4A

310	DISPATCHER ROUND OF 30 MS 320	INTERUPT ENABLE TIME 330 (MINIMUM TIME BETWEEN SUCCESSIVE INTERRUPTS)	DEADLINE (WORST CASE) 340	
Process	Time			
Task 1 322	1		8	
Task 2 324	10		20	
Task 3 326	15		30	
Idle				
ISR 1 332		4		
ISR 1 332		8		
....		...		
ISR 1 332		28		
ISR 2 334				

Figure 4B

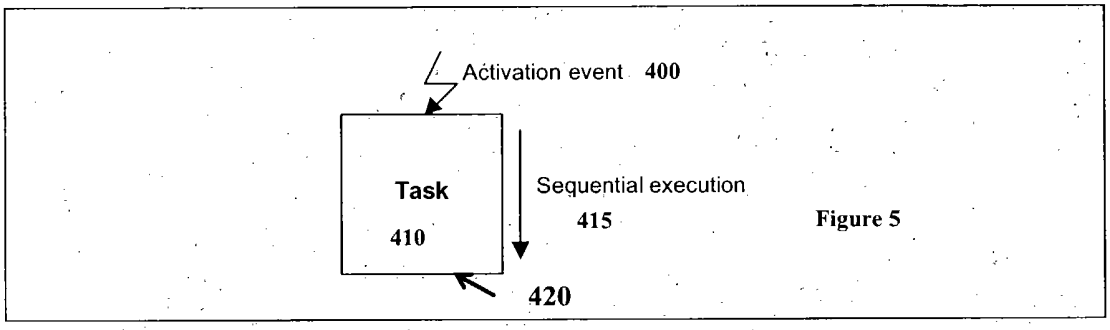
Activation event 400
Task
410
Sequential execution
415
420

Figure 5

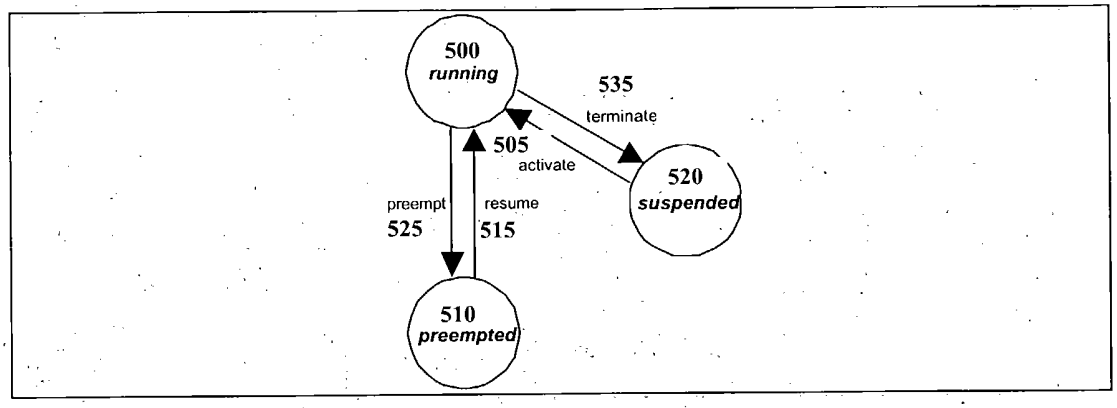
500
running
535
terminate
505
activate
520
suspended
preempt
525
resume
515
510
preempted

Figure 6

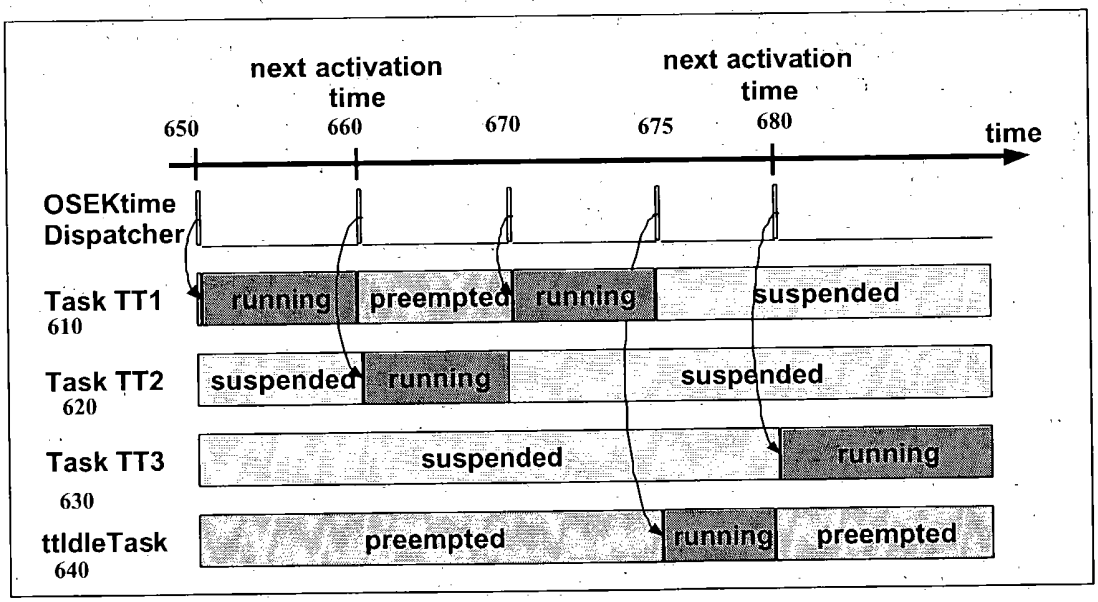
next activation time
next activation time
650
660
670
675
680
time
OSEKtime Dispatcher
Task TT1
610
running
preempted
running
suspended
Task TT2
620
suspended
running
suspended
Task TT3
630
suspended
running
ttIdleTask
640
preempted
running
preempted

Figure 7

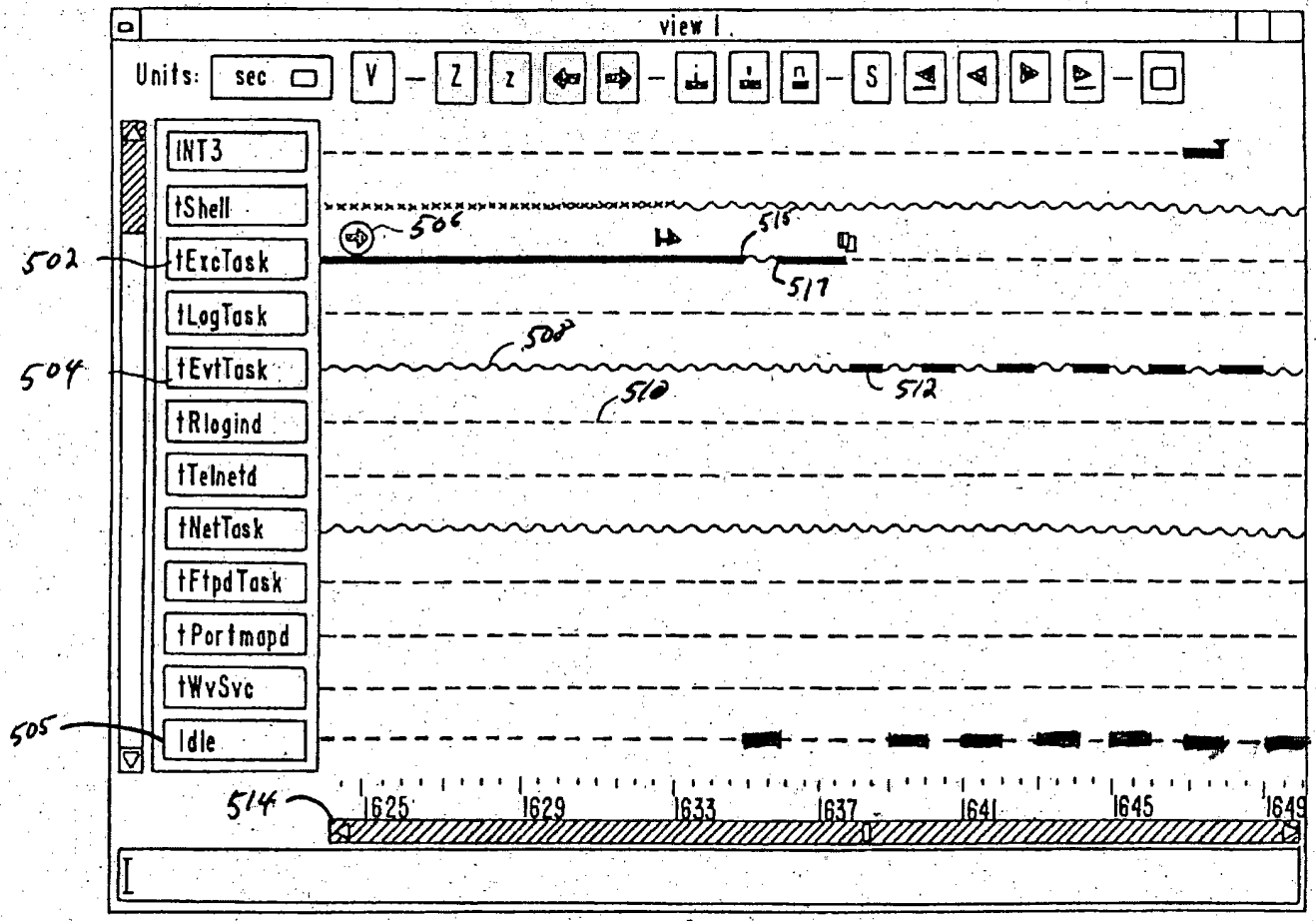
view 1
Units: sec
INT3
tShell
tExcTask
tLogTask
tEvtTask
tRlogind
tTelnetd
tNetTask
tFtpdTask
tPortmapd
tWvSvc
Idle
502
504
505
506
508
510
512
514
515
517
1625
1629
1633
1637
1641
1645
1649

Figure 8A

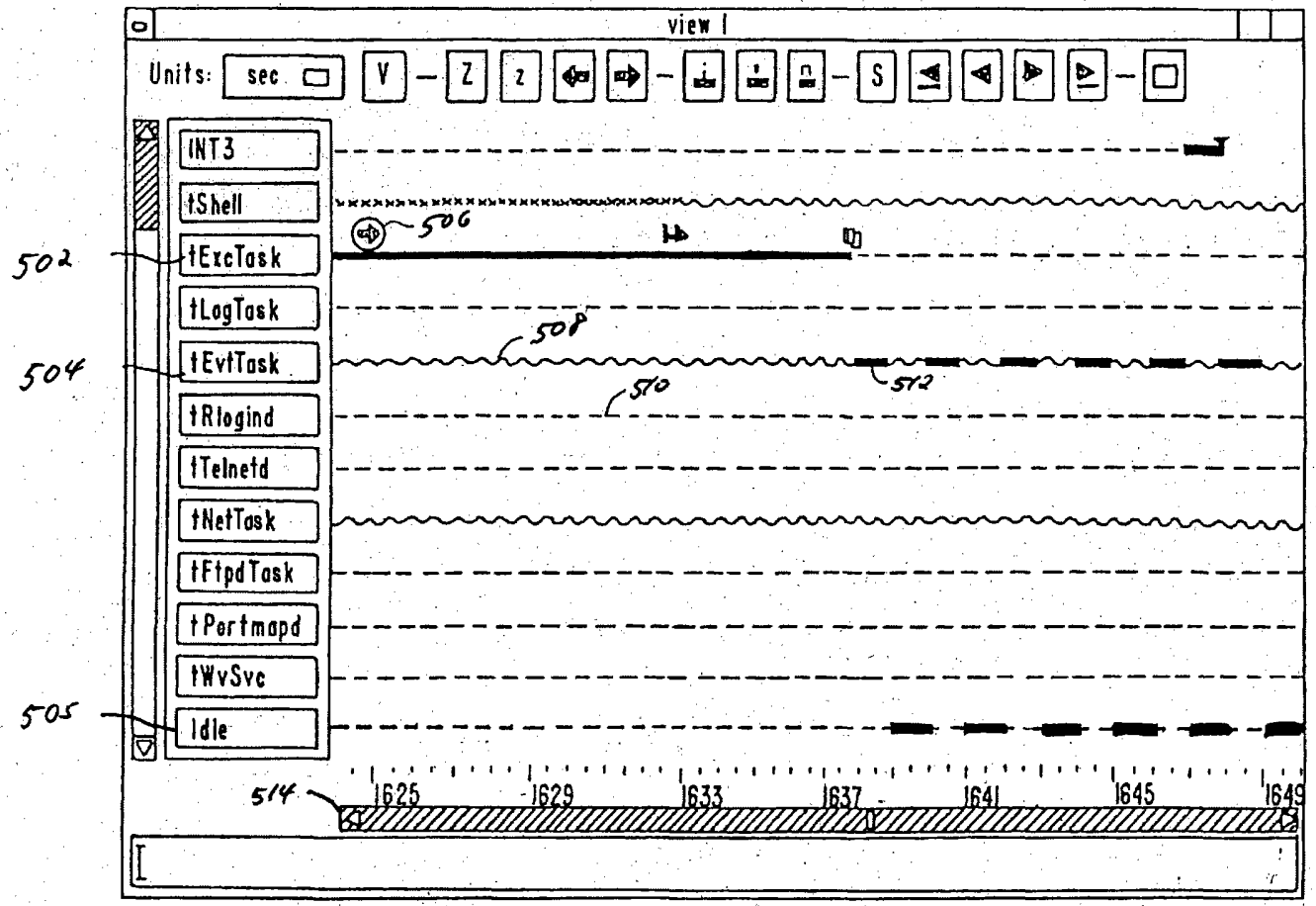
view 1
Units:
sec
INT3
tShell
tExcTask
tLogTask
tEvtTask
tRlogind
tTelnetd
tNetTask
tFtpdTask
tPortmapd
tWvSvc
Idle
502
504
505
506
508
510
512
514
1625
1629
1633
1637
1641
1645
1649

Figure 8B

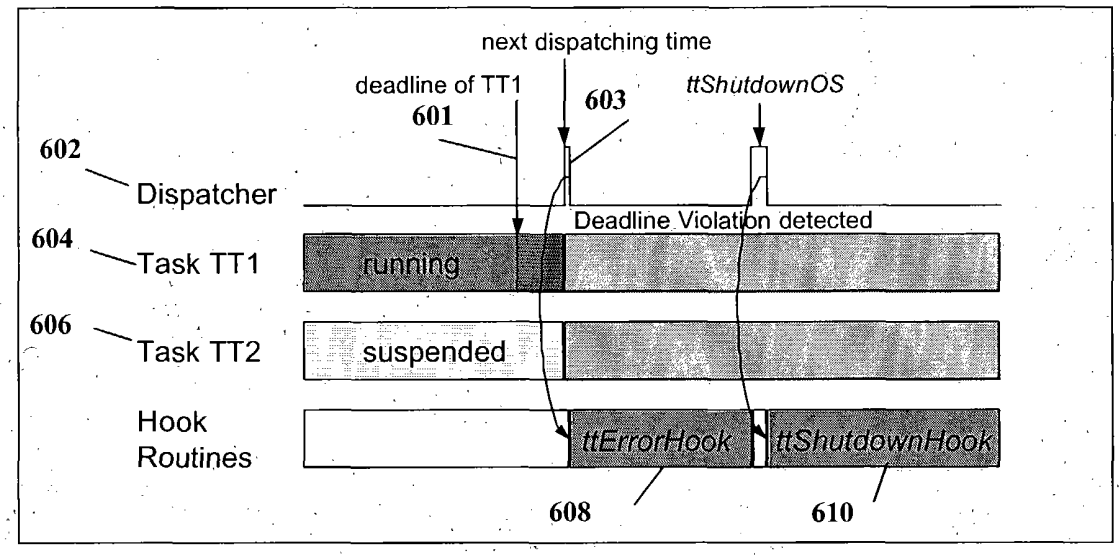
next dispatching time
deadline of TT1
601
603
ttShutdownOS
602
Dispatcher
Deadline Violation detected
604
Task TT1
running
606
Task TT2
suspended
Hook
Routines
ttErrorHook
ttShutdownHook
608
610

Figure 9

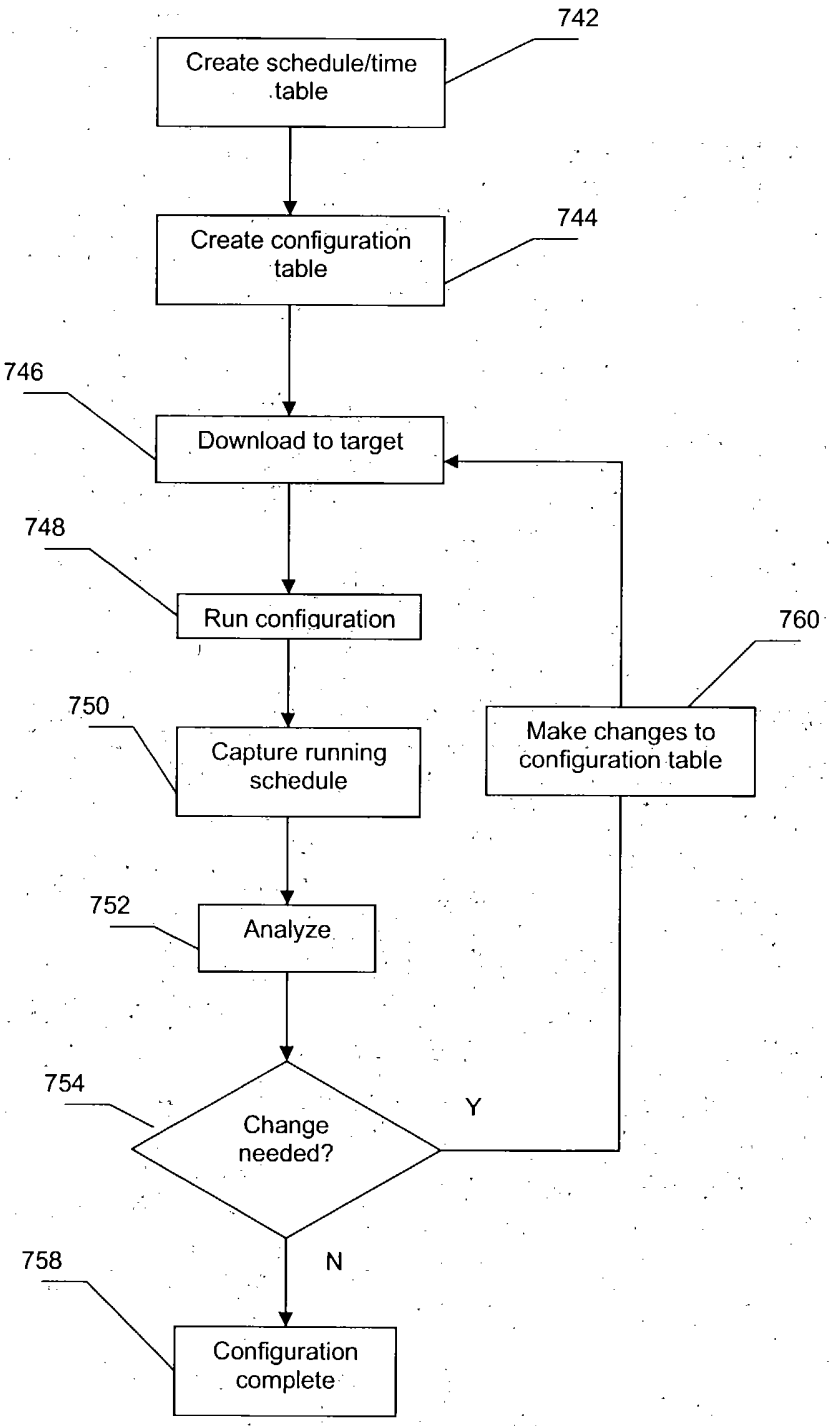
742
Create schedule/time table
744
Create configuration table
746
Download to target
748
Run configuration
760
Make changes to configuration table
750
Capture running schedule
752
Analyze
754
Change needed?
Y
N
758
Configuration complete

Figure 10

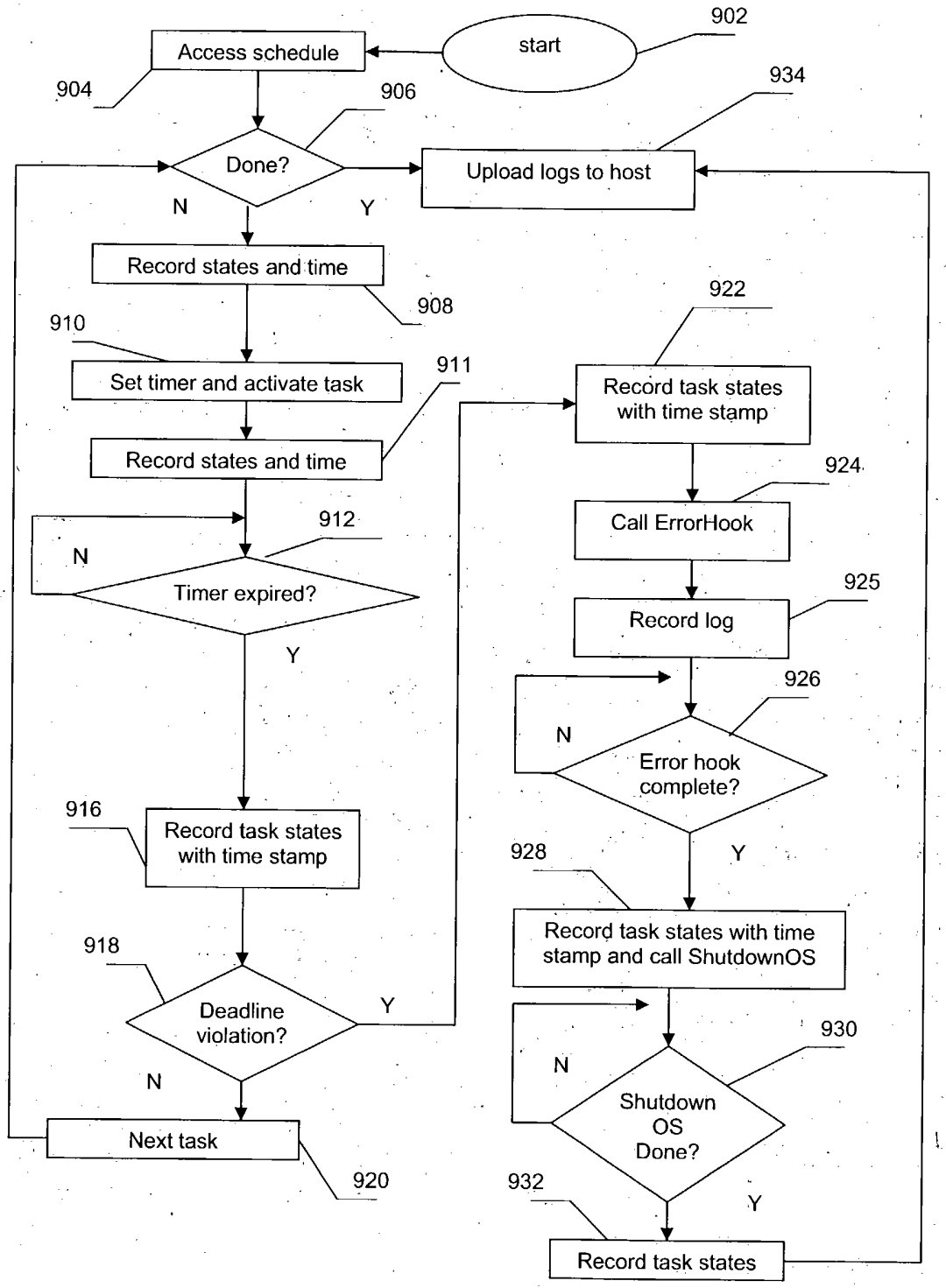
start
902
Access schedule
904
906
Done?
N
Y
Upload logs to host
934
Record states and time
908
910
Set timer and activate task
911
Record states and time
912
N
Timer expired?
Y
916
Record task states with time stamp
918
Deadline violation?
Y
N
Next task
920
922
Record task states with time stamp
924
Call ErrorHook
925
Record log
926
N
Error hook complete?
Y
928
Record task states with time stamp and call ShutdownOS
930
N
Shutdown OS Done?
Y
932
Record task states

Fig. 11